




BILLY GOAT HOMEPRO 34" MOWER

Owner's Manual

HP3400

Accessories

Mulching Kit	
	Reduces lawn clippings to fine nutrient-rich particles that filter down to the soil.
P/N 521400	

Grass Catcher Kit	
Easily convert your mower to bag grass and leaves.	
P/N 521401	



ABOUT THIS MANUAL

THANK YOU for purchasing a BILLY GOAT[®] *HP Mower*. Your new machine has been carefully designed and manufactured to provide years of reliable and productive service. This manual provides complete operating and maintenance instructions that will help to maintain your machine in top running order. Read this manual carefully before assembling, operating, or servicing your equipment.

CONTENTS

SERIAL PLATE DATA AND SPECIFICATIONS _____	<u>3</u>
GENERAL SAFETY _____	<u>4-5</u>
SOUND AND VIBRATION _____	<u>6</u>
INSTRUCTION LABELS _____	<u>7</u>
PACKING CHECKLIST & ASSEMBLY _____	<u>8</u>
OPERATION _____	<u>9-11</u>
MAINTENANCE _____	<u>12-14</u>
TROUBLESHOOTING AND WARRANTY PROCEDURE _____	<u>15</u>
ILLUSTRATED PARTS & PARTS LISTS _____	<u>16-23</u>
ACCESSORIES _____	<u>24</u>
MAINTENANCE RECORD _____	<u>25</u>




SERIAL PLATE DATA

Record the model number, serial number, date of purchase, and where purchased.

Purchase Date: _____

Purchased From: _____

		1803 S.W. Jefferson Lee's Summit, MO 64082 / USA Tel (816) 524-9666 Fax (816) 524-6983	
Model <input type="text"/>		Serial No. <input type="text"/>	
Unit(Weight) <input type="text"/> lbs. <input type="text"/> kg		Engine Power <input type="text"/> kW <input type="text"/> rpm	

Specifications

HP3400

Engine: cc's	344cc
Engine: Model	2158020167B1
Engine: Type	B & S Intek
Engine: Fuel Capacity	2.8 qt. (2.65 L)
Engine: Oil Capacity	1.5 qt. (1.4 L)
Total Unit Weight:	238# (108 Kg)
Max. operating slope	15°
Overall length	68" (1.73m)
Overall width	45.5" (1.16m)
Overall height	43.75" (1.11m)
In accordance with 2000/14/EEC	102dBa
Sound at operators position	82dBa
Vibration at operator position	.7g

GENERAL SAFETY INSTRUCTIONS and SYMBOLS

The safety symbols shown below are used throughout this manual. You should become familiar with them before assembling, operating, or servicing this equipment.



WARNING: This symbol indicates important information that will prevent injury to yourself or others.



This symbol indicates ear protection is recommended when operating this equipment.



This symbol indicates eye protection is recommended when operating this equipment.



This symbol indicates gloves should be worn when servicing this equipment.



This symbol indicates that this manual and the engine manufacturer's manual should be read carefully before assembling, operation, or servicing this equipment.



CAUTION: This symbol indicates important information that will prevent damage to your BILLY GOAT[®] HP Mower.



This symbol indicates the engine oil level should be checked before operating this equipment.

Read and make sure you thoroughly understand the following safety precautions before assembling, operating or servicing this equipment:



READ this manual and the engine manufacturer's manual carefully before assembling, operating, or servicing this equipment.



EAR PROTECTION is recommended when operating this equipment.



EYE PROTECTION is recommended when operating this equipment.



BREATHING PROTECTION is recommended when operating this equipment.



WARNING: **EXHAUST** from this product contains chemicals known to the State of California to cause cancer, birth defects or other reproductive harm.


DO NOT operate this equipment on any unimproved forested, brushy, or grass covered land unless a spark arrester is installed on the muffler as required by Section 4442 of the California Public Resources Code. The arrester must be maintained in good working order. Other states may have similar laws. Federal laws apply on federal lands.


























DO NOT run engine in an enclosed area. Exhaust gases contain carbon monoxide, an odorless and possibly fatal poison.



WARNING: IMPORTANT! This cutting machine is capable of amputating hands and feet and throwing objects. Failure to observe the following safety instructions could result in serious injury or death.



WARNING:  **DO NOT** run this equipment indoors or in any poorly ventilated area. Refueling outdoors is recommended.

-  **DO NOT** refuel this equipment while the engine is running. Allow engine to cool for at least two minutes before refueling.
-  **DO NOT** store gasoline near an open flame.
-  **DO NOT** remove gas cap while engine is running.
-  **DO NOT** start or operate engine if strong odor of gasoline is present.
-  **DO NOT** start or operate engine if gasoline is spilled. Move equipment away from spill until gasoline has completely evaporated.
-  **DO NOT** smoke while filling the fuel tank.
-  **DO NOT** check for spark with spark plug or spark plug wire removed. Use an approved spark tester.
-  **DO NOT** operate engine without a muffler. Inspect muffler periodically and replace if necessary. If equipped with muffler deflector, inspect deflector periodically and replace if necessary.
-  **DO NOT** operate engine with grass, leaves or other combustible material near the muffler.
-  **DO NOT** touch muffler, cylinder, or cooling fins when hot. Contact with hot surfaces may cause severe burns.
-  **DO NOT** leave equipment unattended while in operation.
-  **DO NOT** park equipment on a steep grade or slope.
-  **DO NOT** operate equipment with bystanders in or near the work area.
-  **DO NOT** allow children to operate this equipment.
-  **DO NOT** operate equipment with guards removed.
-  **DO NOT** operate equipment near hot or burning debris or any toxic or explosive materials.
-  **DO NOT** operate equipment on slopes greater than specified in Specifications section of this manual.
-  **DO NOT** operate barefoot or wearing open sandals. Always wear substantial footwear
-  **DO NOT** place hands or feet underneath unit, or near any moving parts.
-  **DO NOT** pull mower backwards unless absolutely necessary
-  **DO NOT** operate the mower while under the influence of alcohol or drugs.
-  **DO NOT** operate mower in wet grass. Always be sure of your footing; keep a firm hold on the handle and walk; never run.
-  **DO NOT** mow near drop-offs, ditches, or embankments. The operator could lose footing or balance
-  **DO NOT** mow excessively steep slopes.
-  **DO NOT** change the engine governor setting or overspeed the engine.
- ALWAYS** Stop the blade(s) when crossing gravel drives, walks, or roads.
- ALWAYS** Shut the engine (motor) off and wait until the blade comes to complete stop before removing grass catcher.
- ALWAYS** Mow only in daylight or good artificial light.
- ALWAYS** Disengage the self-propelled mechanism or drive clutch on mowers so equipped before starting the engine.
- ALWAYS** wear safety goggles or safety glasses with side shields
- ALWAYS** remove spark plug wire when servicing equipment to prevent accidental starting.
- ALWAYS** check fuel lines and fittings frequently for cracks or leaks. Replace if necessary.
- ALWAYS** store fuel in approved safety containers.
- ALWAYS** wear proper foot apparel when mowing.



WARNING: Important

Remove all rocks, wire, string, etc. that can present a hazard during work prior to starting.



DO identify and mark all fixed objects to be avoided during work such as sprinkler heads, water valves, limbs, or clothes line anchors, etc.



SOUND




L_{WA}

102 dB(a)

SOUND LEVEL 82 dB(a) at Operator Position

Sound tests were conducted in accordance with 2000/14/EEC, and were performed on 9-24-2010 under the conditions listed below.

 Sound power level listed is the highest value for any model covered in this manual. Please refer to serial plate on the unit for the sound power level for your model.

General Conditions:

Temperature:

Wind Speed:

Wind Direction:

Humidity:

Barometric Pressure:

Sunny

69°F (21°C)

10 mph (16.1 kmh)

West

56%

30.16 Hg (102.13 kpa)

VIBRATION DATA

VIBRATION LEVEL .7 g (7.52m/s²)

Vibration levels at the operator's handles were measured in the vertical, lateral and longitudinal directions using calibrated vibration test equipment. Tests were performed on 9-24-10 under the conditions listed below.

General Conditions:

Temperature:

Wind Speed:

Wind Direction:

Humidity:

Barometric Pressure:

Sunny

69°F (21°C)

10 mph (16.1 kmh)

West

56%

30.16 Hg (102.13 kpa)

INTENDED USE

INTENDED USE: This unit is mainly designed for cutting grass. Some overgrown weeds, and taller grass may also be cut. Be sure to inspect work area and machine before operating. Make sure that all operators of this equipment are trained in general machine use and safety.



INSTRUCTION LABELS

The labels shown below were installed on your BILLY GOAT® HP Mower. If any labels are damaged or missing, replace them before operating this equipment. Item numbers from the Illustrated Parts List and part numbers are provided for convenience in ordering replacement labels. The correct position for each label may be determined by referring to the Figure and Item numbers shown.



LABEL DANGER KEEP HANDS AND FEET AWAY
ITEM #71 P/N 400424



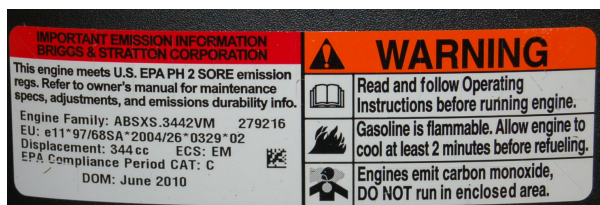
DANGER FLYING DEBRIS
ITEM #68 P/N 810736



LABEL WARNING GUARDS
ITEM #82 P/N 900327

ENGINE LABELS

BRIGGS AND STRATTON



Note: Label may be differ from what is shown here

THROTTLE AND CONTROL LABELS

PUSH DOWN - ENGAGE BLADE

CUTTING HEIGHT ADJUSTMENT
SPACERS ON BOTTOM = HIGHER CUT
SPACERS ON TOP = LOWER CUT
See owner's manual for specific instructions

WARNING

- Do not place hands or feet under deck or near moving parts.
- Do not allow children to operate.
- Do not mow near drop offs, cliffs or in wet grass as a falling danger is possible
- Do not leave equipment unattended while in operation.

PULL UP - ENGAGE DRIVE

GEAR SELECTION

R N 1 2 3

LIFT SHIFTER BAR TO SLIDE TO REVERSE

521301

LABEL HP CONSOLE ITEM #13
P/N 521301





PACKING CHECKLIST

Your Billy Goat Mower is shipped from the factory in one crate, completely assembled except for the handles and controls.



READ all safety instructions before assembling unit.
TAKE CAUTION when removing the unit from the box.



PUT OIL IN ENGINE BEFORE STARTING

PARTS BAG & LITERATURE ASSY

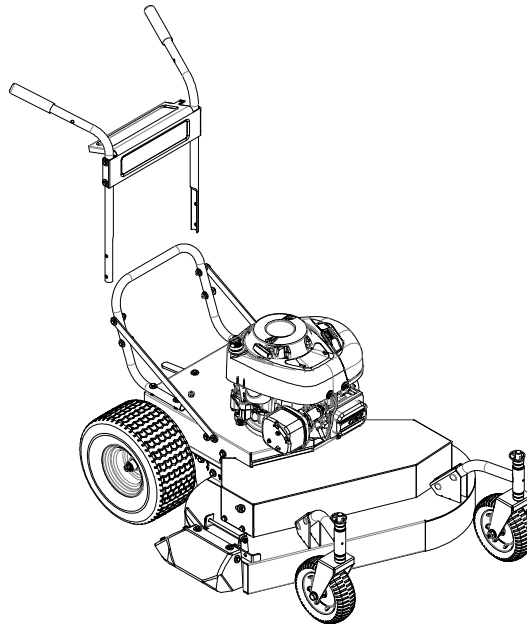
Warranty card P/N- 400972, Owner's Manual P/N-521302.

Boxing Parts Checklist

☐ Briggs and
Stratton Intek

Parts Bag checklist

☐ Ty-wrap qty 4
P/N-900407




ASSEMBLY

NOTE: All item numbers called out in the assembly, operation, and maintenance sections of this manual can be found on Parts List (pages 16-23).

1. Remove the unit from the box, be careful when removing it as there are cables that could be damaged by the machine when rolling it out of the box.
2. Attach the upper handle assembly to the lower handle assembly using the hardware found in the holes located on the lower handle.
3. Attach the throttle cable to the upper handle with the hardware located in the hole on the right side of the upper handle.
4. Attach the drive and blade cables levers to the upper handle using the hardware provided. Note: The blade cable will also need to be attached to the console. To attach it run one of the nuts off of the thread and slide the cable through the slot then run the nut back down and tightening it. The standard setting should be positioned near the bottom of the barrel of the cable. For fine tuning the lever see page 14 for cable tension adjustments.
5. Make sure that all cables and levers function properly. They should not kink or bind in anyway.
6. Using the Ty-wraps provided in the hardware bag, secure the cables. Make sure that no cable is coming into contact with a moving surface such as the wheels.
7. Fill with oil and gas to the proper level and the unit is ready to mow.
8. Read the rest of the operator's manual.



OPERATION

 Like all mechanical tools, reasonable care must be used when operating machine. **Inspect machine work area and machine before operating. Make sure that all operators of this equipment are trained in general machine use and safety.**

 **PUT OIL IN ENGINE BEFORE STARTING**

STARTING

 **ENGINE:** See engine manufacturer's instructions for type and amount of oil and gasoline used. Engine must be level when checking and filling oil and gasoline.

ENGINE SPEED: Controlled by throttle lever on the upper handle.

FUEL VALVE: Move fuel valve to "ON" position (when provided on engine).


CHOKE: Operated with the throttle control by moving the throttle control to the full start position.


THROTTLE: Move remote throttle control to fast position. Pull starting rope to start engine.

1. Select desired cutting height before starting engine.
2. Be sure drive lever or blade lever are not engaged.
3. Choke if necessary.
4. Pull back on starter rope slowly until resistance is felt. Then pull cord rapidly to start. Repeat if necessary.


Do not operate if excessive vibration occurs. If excessive vibration occurs, shut engine off immediately and check for damaged or worn blade, loose blade bolt, loose engine or lodged foreign objects. **Note:** See maintenance section for proper blade bolt torque specifications.


HANDLING & TRANSPORTING:

 Using two people to lift machine is recommended. Lift holding the handle and the caster arm at the front of deck. Secure in place during transport.

 Never lift the machine while the engine is running. **ENGINE MUST BE OFF** while handling, lifting, or transporting the unit on or off the vehicle.

STORAGE

 Never store engine indoors or in enclosed poorly ventilated areas with fuel in tank, where fuel fumes may reach an open flame, spark or pilot light, such as a furnace, water heater, clothes dryer or other gas appliance. **If engine is to be unused for 30 days or more, prepare as follows:**

 Be sure engine is cool. Do not smoke. Remove all gasoline from carburetor and fuel tank to prevent gum deposits from forming on these parts and causing possible malfunction of engine. Drain fuel outdoors, into an approved container, away from open flame. Run engine until fuel tank is empty and engine runs out of gasoline.

NOTE: Fuel stabilizer is an acceptable alternative in minimizing the formation of fuel gum deposits during storage. Add stabilizer to gasoline in fuel tank or storage container. Always follow mix ratio found on stabilizer container. Run engine at least 10 min. after adding stabilizer to allow it to reach the carburetor.

CAUTION: Wheels must be chocked or blocked when unit is parked on a slope.




HP Owner's Manual

CUTTING OPERATION

CAUTION: Shut off the blades when crossing gravel drives, walks or roads and under all conditions where thrown objects might be a hazard.

CLEARING A CLOGGED CUTTING DECK: Turn engine off and wait for blade to stop completely. Disconnect spark plug wire and place the unit in gear to prevent the unit from rolling.

 Wearing durable gloves, remove clog. **Danger**, the clog may contain sharp materials. Reconnect spark plug wire.

CAUTION: Use extreme care when operating the blades. Inspect the work area for foreign objects that could cause damage to the unit or injure the operator if struck by the blade. Never operate the blades with bystanders in the work area.

GENERAL OPERATION: To engage the blades, depress the operator's left hand control lever against operator's handle. The blade is disengaged by releasing this lever. (See Fig. 16-5 next page) To engage the wheel drive lift the operator's right hand control lever against operator's handle. The drive is disengaged by releasing this lever. (See Fig. 16-6 next page) Ground speed can be varied by shifting gears as described on page 11. To begin cutting, engage the blade lever, allow the blade to spin up to speed, and engage the wheel drive to begin moving forward into the material to be cut.

NOTE: Do not engage blades during transport between work sites. The blade should remain disengaged at all times when work is not being performed.

The best performance is achieved when cutting in dry conditions. If the deck becomes choked with grass or debris during operation, back unit off of debris allowing machine to clear itself and continue cutting, or shut the unit off and clear the clog by hand (See above). A drop in engine RPM or a noticeable change in engine sound is usually a good indicator of a clogged discharge or other interference.

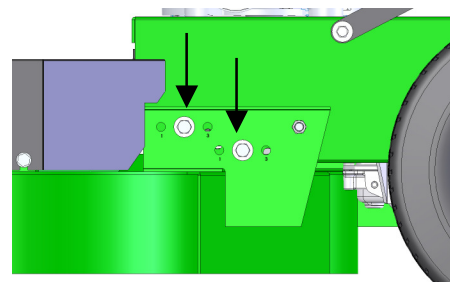
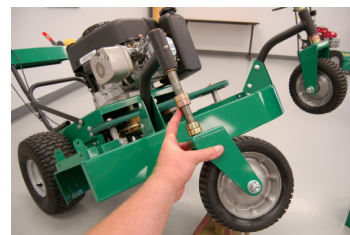
Under most conditions cutting should be done in second or third gear. The quality of the cut produced is directly related to the unit's ground speed during cutting. If the quality of the cut is not satisfactory (i.e. material left standing) you should shift into a lower gear during cutting.

CUTTING HEIGHT ADJUSTMENT

CAUTION: DO NOT make cutting height adjustment when engine is running.

Cutting height can be adjusted from 1.5" to 3.5" by placing spacers above or below caster spindles. For easiest adjustment change the height on one side at a time. To change cutting height, tilt the unit back, remove lynch pin, remove all spacers then set if off to the side, remove caster rig, add or subtract spacers, reinstall caster rig, place remainder of spacers if any, then reinsert lynch pin (see figure right). Repeat this step on other side. For finer adjustment relocate the bolts located on the deck brackets to change the angle of the deck. See the chart below for the corresponding positions and cutting heights

NOTE: Be sure that the spacers are even on both casters. Running the deck out of level will result in poor cut quality.



Cutting Height Chart	Number of spacers below caster arm				
	0 Spacers	1 Spacer	2 Spacers	3 Spacers	4 Spacers
Bolts in position #1 on deck	1.5"	1.88"	2"	2.3"	2.5"
Bolts in position #2 on deck	1.5"	2"	2.4"	2.75"	3"
Bolts in position #3 on deck	1.75"	2"	2.5"	3"	3.5"

Note that all cutting heights will be from the lowest cutting edge with standard blades



BLADE CLUTCH

The HP mower blade clutch is controlled by an operator presence control. To engage the blade, depress the operator's left hand control lever against operator's handle. The blades are disengaged by releasing this lever. (See figure 16-5)

NOTE: The blade clutch must be either fully engaged for cutting or fully disengaged to bring the blades to a stop. Do not operate the unit with the blade clutch partially engaged. Premature belt wear and clutch failure will result from improper operation of the clutch.

CAUTION: Use extreme care when operating the blades. Inspect the work area for foreign objects that could cause damage to the unit or injure the operator if struck by the blade. Never operate the blades with bystanders in the work area. Never operate the blade without either the discharge deflector chute or the grass catcher in place.

PROPULSION

This unit is self-propelled, and is controlled by an operator presence control. To engage the wheel drive, lift the operator's DRIVE lever on the right side against operator's handle. The drive is disengaged by releasing the lever. (See figure 16-6).

GROUND SPEED can be varied by selecting a higher or lower gear using the gearshift lever on the frame (see figure 16-7). **Note:** Only change gear selection when unit is stopped. Under most conditions cutting should be done in second or third gear. The quality of the cut produced is directly related to the unit's ground speed during cutting. If the quality of the cut is not satisfactory (i.e. material left standing), you should shift into a lower gear during cutting.

HILLSIDE MOWING

WARNING! Never mow on any slope greater than 15 degrees. Always mow across the face of slopes; never up and down or diagonally (see figure 16-8). DO NOT attempt sudden starts or stop when mowing on a slope. Avoid sudden turns and use extreme caution when changing direction on a slope.

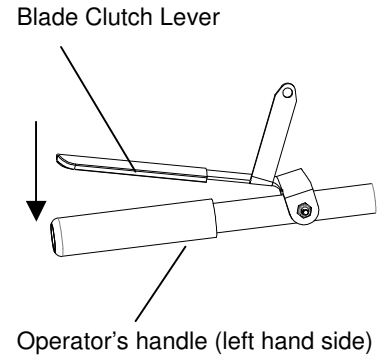


Fig. 16-5

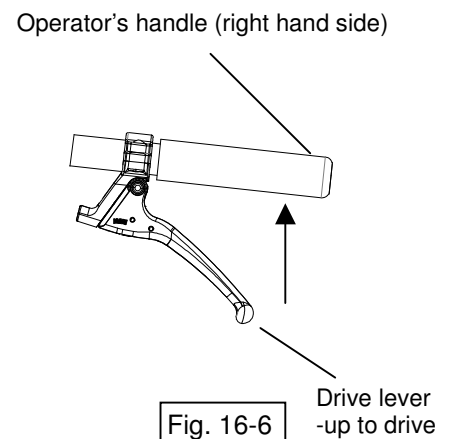


Fig. 16-6

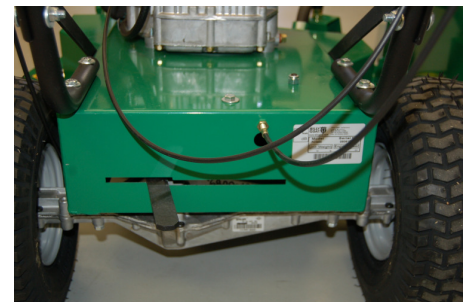


Fig. 16-7

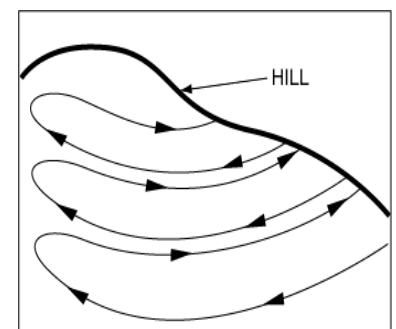


Fig. 16-8



MAINTENANCE

PERIODIC MAINTENANCE

Periodic maintenance should be performed at the following intervals:

Maintenance Operation	Every Use (daily)	Every 5 hrs or (daily)	Every 25 Hrs	Every 50 Hrs (Yearly)	Every 150 Hrs
Inspect for loose, worn or damaged parts.	•				
Check for excessive vibration		•			
Inspect belt for wear				•	
Engine (See Engine Manual)					
Grease caster pivot points and lubricate height adjustment spacers				•	
Sharpen Blade			•		
Check tire pressure Note: inflate to mfr.'s specs. as shown on tire side wall			•		
Replace blade and traction belts					•

Note: Blade, and drive belts are normal wear items. These should be inspected on a regular basis and replaced if worn. Also see your Billy Goat Dealer for servicing your machine.

BLADE Removal / Sharpening

⚠ NOTE: When sharpening the blade it is a good idea to check the balance of the blade. A properly balanced blade will increase life of the bearings and other components.

DO NOT change the blades with the unit running.

Tools required: ratchet, 15/16" inch socket, torque wrench, adequate support, block to inhibit blade rotation.

1. Disconnect spark plug wire.
2. Chock the back tires.
3. Support front of unit to allow access to the blades.

Note: Unit is heavy. Be sure support is adequate to prevent personal injury.

4. Block the blade to prevent it from rotating during removal.

For Each Spindle:

5. Remove the blade bolt (Item 81), and lock washer (83).

6. Remove the blade (12) and replace or sharpen the blade.

NOTE: Use only B.G.I. Part no. 521109 (Standard blade) or B.G.I. Part no. 521232 (Mulch blade).

7. Reinstall the blade using all fasteners in the exact order they were removed.

8. Torque blade screw to 55-60 ft-lbs.

NOTE: Before installing the fasteners inspect them for wear and replace as necessary.

9. Reconnect spark plug wire.





BELT REPLACEMENT


When replacing one belt the other should be inspected for wear and replaced if worn. It is good practice to change both belts when either is worn beyond use. Use only original equipment belts for replacement. Billy Goat uses only premium quality, Kevlar corded and coated belts in your unit. Substitute belts do not meet the design and performance requirements for your unit, and will greatly reduce machine performance and belt life.

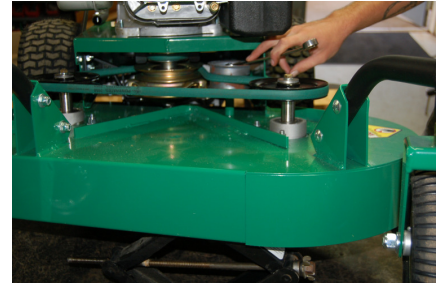
Blade Drive Belt

1. Disconnect spark plug wire.
2. Remove the deck belt cover.
3. Loosen but do not remove the idler pulley on the deck this will loosen tension and allow the belt to be removed from the two pulleys and disconnect the cable from the clutch.
4. Place a blocks under the frame in front of the rear wheels for support and blocks under the deck. Then remove the clutch anti-rotation bracket.
5. Remove the bolts attaching the deck to the frame, separating the two.
6. Tilt the housing section backwards which will allow easier access to the clutch. Slip the belt off of the clutch.
7. Replace the belt.
8. Reattach the anti rotation bracket and clutch cable to the clutch.
9. Reattach the deck to the housing.
10. Loop the belt around the blade pulleys and tighten the idler pulley. this will put tension on the belt.
11. Replace the cover.
12. Reconnect spark plug wire.
13. Start engine and check for proper operation of blade drive system. If necessary you can make adjustments to the cable tension on the console.

Transaxle Drive Belt

1. Disconnect spark plug wire.
2. Follow steps 2 through 6 of the previous section.
3. Loosen but do not remove the rear belt finger, rotate it out of the way so the belt can be removed. **CAUTION** do not bend the bracket in the process.
4. Slide the belt off of the pulley on the transaxle and then slide it off of the clutch.
5. Replace the belt with a new one. install it in reverse order that the old one was taken off.
6. Hold the rear belt finger in place while re-tightening it.
7. Install the blade belt removed .
8. Follow steps 8 through 12 in the previous section.
9. Start engine and check for proper operation of drive system. If necessary you can make adjustments to the cable tension on the engine base.

 **WARNING:** If the drive belt begins to squeal or slip, do not continue to operate your unit until adequate adjustment or repair has been performed. Improper adjustment can cause drive belt to slip and overheat, greatly reducing machine performance and transmission life.





CABLE ADJUSTMENTS

Transaxle Drive Control Cable Adjustment

When the transaxle drive belt slips, the drive control cable needs to be adjusted or the belt needs to be replaced with a new belt.

Cable Adjustment:

2. Using a ½ " open end wrench, turn the inside adjusting nut counter-clockwise and back it off 1/8", then tighten the outboard adjusting nut against the support bracket (see figure 17-2).

3. Check for proper operation. If the operation is not correct, repeat step 2.

4. Replace the access door.

The drive control cable adjustment should be the minimum amount required so the belt does not slip when the drive is engaged.

Blade Drive Control Cable Adjustment

When the blade drive control lever is depressed, the blades should turn and the blade drive belt should not slip. When the cable is properly adjusted the tension spring on the end of the control cable will open slightly (only enough for a piece of paper to slip between the coils). Cable Adjustment:

1. Remove the belt cover and observe the tension spring on the end of the cable that attaches to the idler when the blade drive lever is depressed. The spring should just break open.

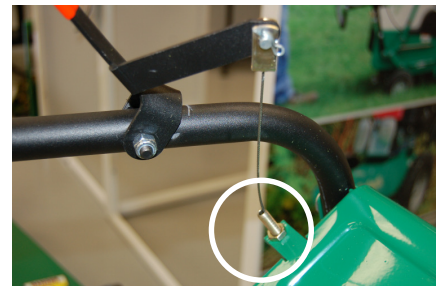
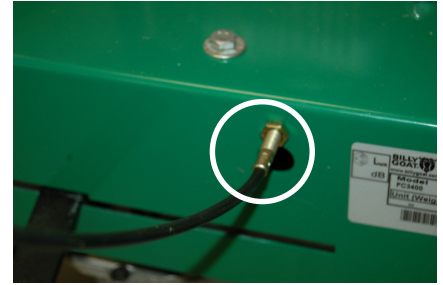
2. If adjustment is required, using a ½" open end wrench, turn the inboard adjustment nut counter-clockwise and back it off 1/8". Then tighten the outboard adjustment nut against the cable support bracket (Item 49).

3. Check the spring tension with the blade drive lever depressed.

4. Readjust the control cable as needed for proper tension.

5. Replace the deck belt cover.

Note: Too much tension will shorten belt and bearing life and too little tension will allow the belt to slip.





Troubleshooting

Problem	Possible Cause	Solution
Engine will not start.	Choke not on. Out of gasoline, bad or old gas. Spark plug wire disconnected. Dirty air cleaner. Blade clutch is engaged	Move throttle to start position. Check Gasoline. Check for spark with an approved tester. Clean or replace air cleaner. Disengage the Blade clutch lever.
Engine will not stop	Damaged control cable. Harness Wire is disconnected or damaged. Damaged ignition switch.	Replace control cable. Reconnect harness wire or replace if damaged. Replace switch.
Engine runs poorly	Spark plug wire loose. Engine RPM set too low. Carburetor out of adjustment. Water or dirt in fuel system. Spark plug fouled, faulty or wrong gap	Sharpen or replace blade (pg 12). Check engine RPM (refer to engine manual). Adjust carburetor (refer to engine manual). Reset gap or replace spark plug (refer to engine manual).
Abnormal vibration.	Loose or out of balance blade. Bent blade. Loose engine bolts	Stop work immediately. Check blade mount and balance. Replace damaged or bent blade if required (pg 12). Check engine mount.
Uneven cut	Height adjust is not set correctly. Dull or bent blade. Tire pressure low on one side.	Be sure height adjust is set the same on both sides(pg 10). Sharpen or replace blade (pg 12). Adjust pressure.
Will not cut or has poor cutting performance	Dull or bent Blade. Clogged deck. Engine running at too low RPM. Wet Grass. Excessively high grass.	Sharpen or replace blade (pg 12). Unclog deck(pg 10). Check engine RPM (refer to engine manual). Do not mow when grass is wet. Mow once at a high cutting setting then mow again at desired setting or make a narrower cutting path.
Belt slips or smokes	Belt tension too low. Belt worn or stretched. Pulleys worn or damaged. Control cable out of adjustment.	Increase tension at idler (pg 14). Replace belt. Replace Pulleys. Adjust control cable
No self propelling	Not set to gear. Out of adjustment clutch cable. Broken clutch cable. Worn or broken belt.	Shift lever to desired gear. Adjust clutch cable(pg 14). Replace with new cable. Replace belt (pg 13).
Self propelled drive will not release.	Clutch cable out of adjustment. Damaged drive clutch lever.	Adjust clutch cable (pg 14). Replace drive clutch lever.
Engine is locked, will not pull over.	Debris locked against blade. Damaged engine.	Remove debris (pg 10). Refer to engine owner's manual. Replace control cable.

When servicing engine refer to specific manufacturers engine owner's manual. All engine warranty is covered by the specific engine manufacturer. If your engine requires warranty or other repair work contact your local servicing engine dealer. When contacting a dealer for service it is a good idea to have your engine model number available for reference(See table page 12). If you cannot locate a servicing dealer in your area you can contact the manufacturers national service organization.

To reach: Briggs & Stratton: 800-233-3723

WARRANTY CLAIM PROCEDURE

Should a BILLY GOAT[®] machine fail due to a defect in material and/or workmanship, the owner should make a warranty claim as follows:

- The machine must be taken to the dealer from whom it was purchased or to an authorized Servicing BILLY GOAT Dealer.
- The owner must present the remaining half of the Warranty Registration Card, or, if this is not available, the invoice or receipt.
- The Warranty Claim will be completed by the authorized BILLY GOAT Dealer and submitted to their respective BILLY GOAT Distributor for their territory Attention: Service Manager. Any parts replaced under warranty must be tagged and retained for 90 days. The model number and serial number of the unit must be stated in the Warranty Claim.
- The distributor service manager will sign off on the claim and submit it to BILLY GOAT for consideration.
- The Technical Service Department at BILLY GOAT will study the claim and may request parts to be returned for examination. BILLY GOAT will notify their conclusions to the distributor service manager from whom the claim was received.
- The decision by the Technical Service Department at BILLY GOAT to approve or reject a Warranty Claim is final and binding.

For online product registration go to www.billygoat.com

TO THROTTLE CONTROL

TO TRANSAXLE

TO BLADE LEVER

TO UPPER HANDLE

TO SPINDLES

Diagram illustrating the exploded view of a lawnmower deck assembly, showing various components and their connections:

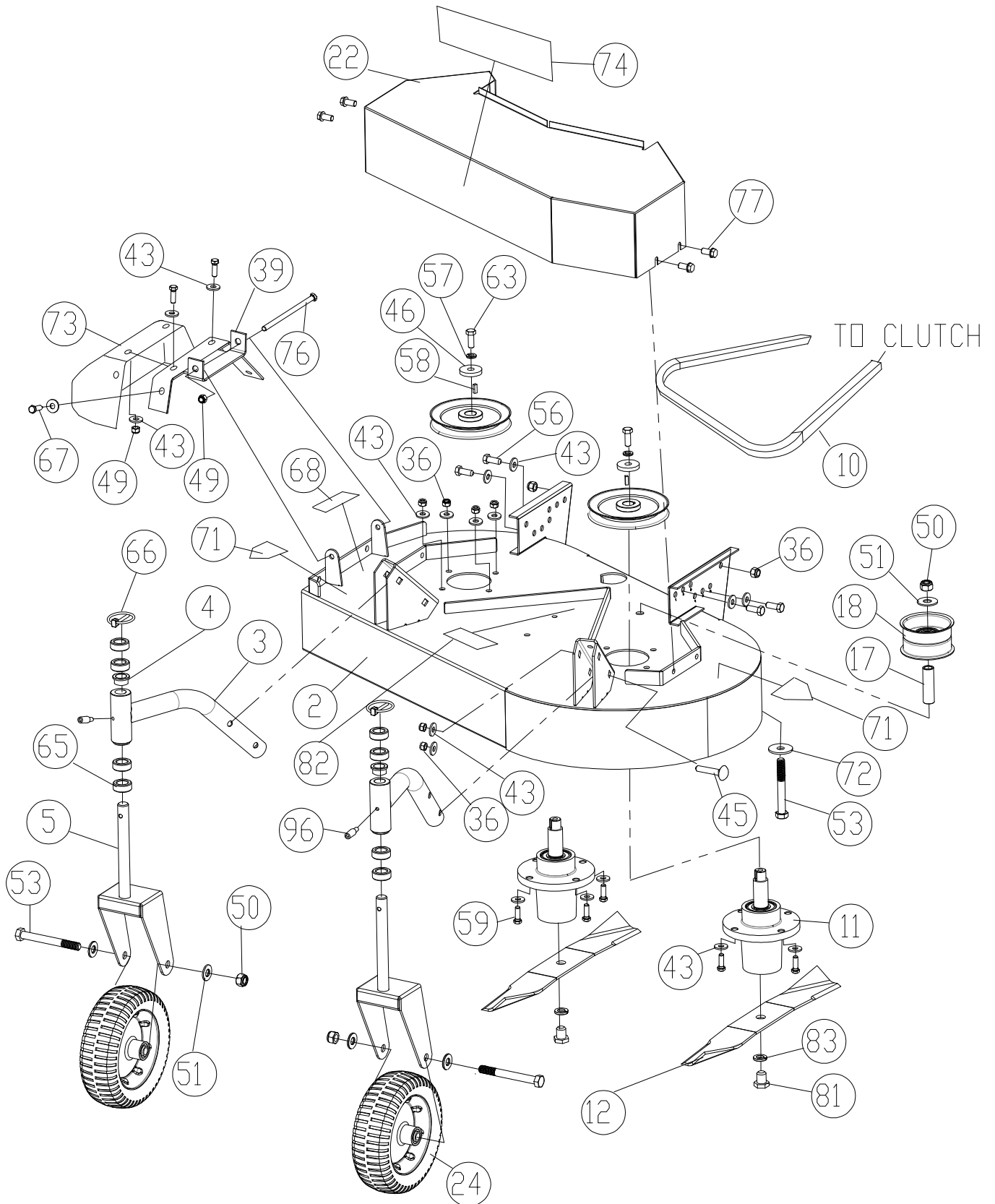
- 15: Engine housing
- 95: Spark plug
- 10: Blade guard
- 9: Blade
- 16: Blade bracket
- 107: Blade lever
- 47: Pin
- 36: Pin
- 67: Pin
- 43: Pin
- 80: Pin
- 1: Deck housing
- 56: Pin
- 43: Pin
- 33: Blade lever arm
- 67: Pin
- 41: Pin
- 43: Pin
- 49: Pin
- 42: Pin
- 19: Pin
- 35: Pin
- 20: Pin
- 36: Pin
- 52: Pin
- 37: Pin
- 55: Pin
- 35: Pin
- 36: Pin
- 23: Pin
- 84: Pin
- 64: Pin
- 85: Pin



PARTS LIST

Item No.	Part Number	Description	Qty
1	521208	Base Engine WA HP	1
9	521122	Belt 4L x 33	1
10	521112	Belt 5L x 60	1
15	521105	Engine 10.5 HP Intek	1
16	521100	Clutch HP	1
19	521212	Idler Arm WA	1
20	521121	Pulley idler arm HP	1
23	521116	Bracket Anti-Rotation	1
33	521218	Brace Handle HP	2
35	500114	Bolt Shoulder 1/2" x 1"	3
36	8160003	Nut Lock 3/8" - 16	23
37	521115	Belt Finger Front HP	2
41	521117	Belt Finger Rear HP	1
42	521123	Spring Idler HP	1
43	8171003	Washer 5/16 Flat ZP	62
44	8041031	Screwcap 5/16-18 x 1/4" HEX ZP	10
47	8177013	Washer lock 7/16" S/T Med	1
49	8160002	Nut Lock 5/16-18 HEX ZP	16
52	8041054	Screwcap 3/8" - 16 x 2"	1
55	890408	Screw 3/8" x 1 1/2" TCS	4
56	8041050	Screwcap 3/8"-16 x 1" HCS ZP	7
64	8181007	Washer Lock 1/4" External Tooth	2
67	8041028	Screwcap 5/16-18 x 1" HEX ZP	8
80	8042033	Screwcap 7/16-20 x 4 1/2" HCS GR. 5	1
84	8172019	Washer 3/8 Sae	1
85	8041002	Screwcap 1/4" - 20 x 1/2" HCS ZP	1
95	520182	Oil Drain Plug	1
107	521114	Cable Clutch Blade HP	1

PARTS DRAWING HP





PARTS LIST

Item No.	Part Number	Description	Qty
2	521209	Deck WA HP	1
3	521210	Caster Arm WA HP	2
4	520184	Bushing Flange 1" OD 3/4" ID	4
5	521211	Caster Bracket WA HP	2
10	521112	Belt 5l x 60	1
11	521101	Spindle Assy w/Pulley	2
12	521109	Blade 17.25"	2
17	521225	Spacer Fixed Idler	1
18	521113	Pulley Idler	1
22	521108	Guard Belt HP	1
24	441123	Wheel 8" od x 0.5" Bearing	2
36	8160003	Nut Lock 3/8" - 16	23
39	521111	Bracket Mount Deflector	1
43	8171003	Washer 5/16 Flat ZP	62
45	8024062	Bolt Carriage 3/8-16 x 2"	4
46	440153	Washer 1.5 OD x .453 ID x .25 THK	2
49	8160002	Nut Lock 5/16-18 HEX ZP	16
50	8160005	Nut Lock 1/2 - 13 HEX ZP	3
51	8172011	Washer 1/2" SAE ZP	5
53	8041107	Screwcap 1/2"-13 x 4 1/2" HCS ZP	3
56	8041050	Screwcap 3/8"-16 x 1" HCS ZP	7
57	8177012	Washer Lock 3/8" S/T Med	2
58	9201072	Key 3/16" sq x 5/8"	2
59	8041052	Screwcap 3/8" - 16 x 1/2" HCS ZP	8
63	900154	Screwcap 3/8"-24 x 1" HCS Gr. 8	2
64	8181007	Washer Lock 1/4" External Tooth	1
65	520034	Bushing Caster Yoke Spacer	8
66	520004	Lynch Pin 3/16" x 1 9/16"	2
67	8041028	Screwcap 5/16-18 x 1" HEX ZP	8
68	810736	Label Danger Flying Debris	1
71	400424	Label Warning Rotating Blades	2
72	850443-P	Impeller Washer Plated	1
73	521110	Deflector Rubber	1
74	521307	Label Badge Logo HP	1
76	8042034	Screwcap 5/16-18 x 6 1/2" HCS ZP	1
77	8123128	Screw self tap 5/16" x 3/4" HEX	7
81	8042031	Screwcap 5/8"-18 x 1" HCS GR. 8	2
82	900327	Label Warning Guards	2
83	8171010	Washer Lock 5/8" S/T Med	2
96	610363	Zerk Grease Fitting	2

Exploded view diagram of a bicycle seat assembly. The diagram shows the seat (6) mounted on rails (21, 26) with various springs (13, 28, 75) and mounting hardware (bolts, nuts, washers, etc.). The seat is connected to the rails via a central mechanism (106, 90, 91, 32, 34, 30, 89). The rails are supported by a base (33) and a rear support (27). The diagram includes numerous numbered callouts (1-107) identifying specific components and parts.

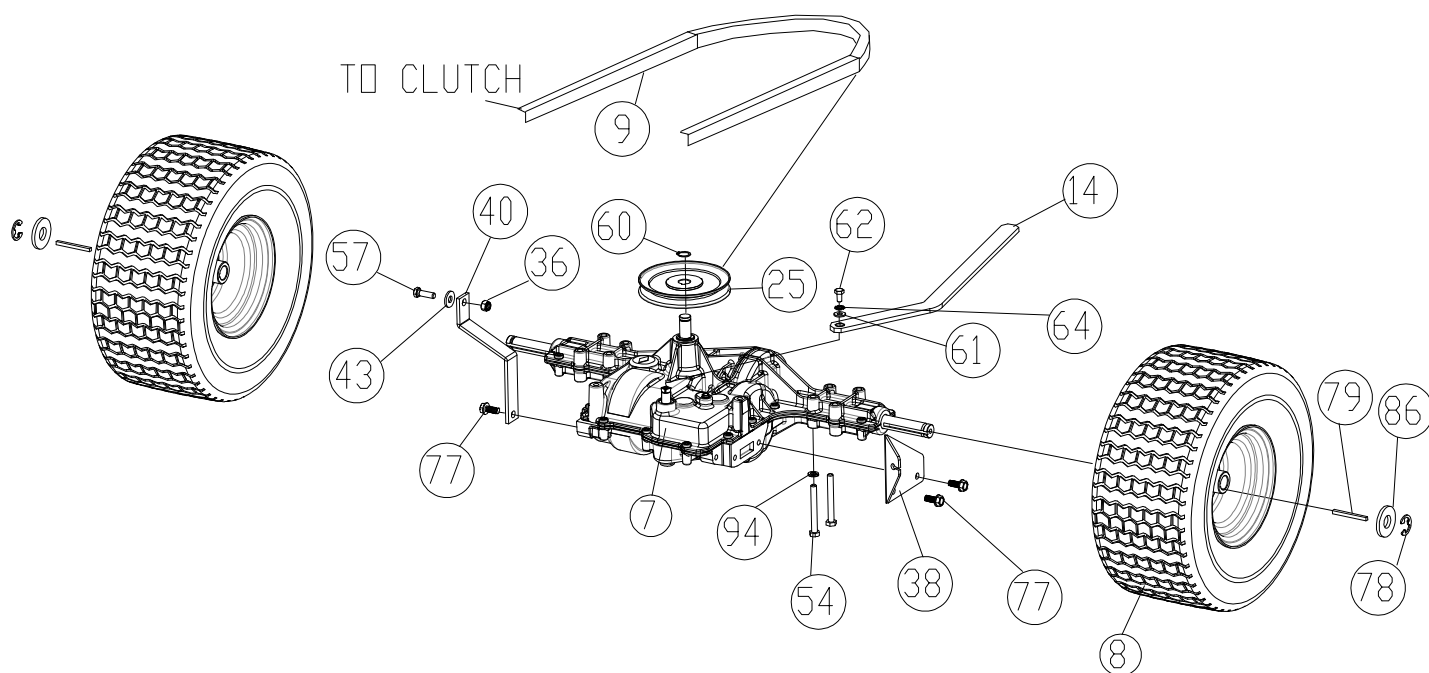
TO ENGINE BASE



PARTS LIST

Item No.	Part Number	Description	Qty
6	521300	Label Logo HP	1
13	521301	Label Instruction HP	1
21	521214	Handle Lower HP	1
26	521216	Handle Upper RH HP	1
27	521215	Handle Upper LH HP	1
28	521104	Lever Control Drive HP	1
30	500267	Grip Handle	2
31	521222	Console WA HP	1
32	521136	Lever Blade HP	1
33	521218	Brace Handle HP	2
34	500379	Grip Lever Orange	1
43	8171003	Washer 5/16 Flat ZP	62
44	8041031	Screwcap 5/16-18 x 1/4" HEX ZP	10
49	8160002	Nut Lock 5/16-18 HEX ZP	16
61	8172007	Washer 1/4" SAE	3
69	8160001	Nut Lock 1/4 - 20 HEX ZP	2
75	840045	Cable Control Throttle	1
87	360284	Bolt Shoulder 3/8" x 1 1/4"	1
89	890132	Plug Tube Insert 1" OD	2
90	440193	Pin Clip Hitch .051 x 3/4"	1
91	440124	Clevis Pin 0.25 x 0.50"	1
92	8041011	Screwcap 1/4-20 x 2 1/4" HCS ZP	1
93	8041032	Screwcap 5/16-18 x 2" HCS ZP	2
106	521124	Cable Clutch Wheel HP	1
107	521114	Cable Clutch Blade HP	1

PARTS DRAWING HP





PARTS LIST

Item No.	Part Number	Description	Qty
7	521102	Transaxle HP	1
8	521103	Wheel 13" x 6.50 Pneu. SP	2
9	521122	Belt 4L x 33	1
14	521120	Bar Shift HP	1
25	521119	Pulley 5" x 5/8 ID	1
38	521125	Bracket Mount Clutch Cable	1
40	521135	Bar Brace Transmission	1
43	8171003	Washer 5/16 Flat ZP	67
54	8041035	Screwcap 5/16"-18 x 2 3/4" HCS ZP	4
57	8177012	Washer Lock 3/8" S/T Med	2
60	850233	Snap Ring 5/8"	1
61	8172007	Washer 1/4" SAE	3
62	850408	Screwcap 1/4"-28 x 1/2" HCS Gr. 5 ZP	1
64	8181007	Washer Lock 1/4" External Tooth	2
77	8123128	Screw self tap 5/16" x 3/4" HEX	7
78	850230	Ring Snap 0.750	2
79	9201087	Key 3/16" sq x 2 1/8"	2
86	850238	Washer .765" ID x 1.25 OD x .06"	2
94	8177011	Washer Lock 5/16" S/T Med	4

